

WHAT IS CLAIMED IS:

1. A fire-sensing apparatus, comprising:
 - a flame sensor for detecting a presence of flame within a volume;
 - 5 a tamper sensor for detecting tampering to the apparatus, wherein the tampering prevents the apparatus from detecting the presence of flame within the volume; and
 - an alarm indicator for indicating an alarm condition in response to at least one of i.) a detection of the presence of flame within the volume, and ii.) a detection of
 - 10 tampering to the apparatus.
2. The apparatus of claim 1, wherein the flame sensor detects ultraviolet energy generated by flame to detect the presence of flame within the volume.
- 15 3. The apparatus of claim 2, wherein the flame sensor has an absence of sensitivity to electromagnetic radiation that normally occurs within the volume.
4. The apparatus of claim 1, further comprising:
 - a smoke sensor for detecting a presence of smoke within the volume, wherein
 - 20 the alarm indicator further indicates the alarm condition in response to a detection of the presence of smoke within the volume.
5. The apparatus of claim 1, wherein the tamper sensor comprises:
 - a motion sensor for detecting motion to the apparatus, wherein a detection of
 - 25 motion to the apparatus is indicative of an attempt to tamper with the apparatus.
6. The apparatus of claim 1, wherein the tamper sensor comprises:
 - a visible light sensor, wherein an absence of visible light to the visible light
 - 30 sensor is indicative of an attempt to tamper with the apparatus.

7. The apparatus of claim 6, wherein the visible light sensor comprises:
means for generating electrical energy from the visible light, wherein the
means for generating electrical energy from the visible light supplies electrical energy
to charge a power supply for powering the apparatus.

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8. The apparatus of claim 1, wherein the alarm indicator indicates the
alarm condition to persons within a vicinity of the apparatus using at least one of an
audible alarm, a visual alarm and a tactile alarm.

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9. The apparatus of claim 1, comprising:
a transmitter for transmitting the alarm condition to a remote monitor.

10. The apparatus of claim 9, wherein receipt of the alarm condition by the
remote monitor generates at least one of an audible alarm, a visual alarm and a tactile
15 alarm at a location of the remote monitor to indicate the alarm condition to the remote
monitor.

11. The apparatus of claim 9, wherein the transmitter transmits a status
message to the remote monitor at periodic intervals.

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12. The apparatus of claim 11, wherein an absence of receipt of the status
message by the remote monitor within the periodic interval is indicative of an alarm
condition associated with the apparatus, and

wherein an absence of receipt of the status message by the remote monitor
25 within the periodic interval generates at least one of an audible alarm, a visual alarm
and a tactile alarm at a location of the remote monitor to indicate the alarm condition
to the remote monitor.

13. The apparatus of claim 11, wherein the status message includes
30 information for identifying a location of a source of the status message to the remote
monitor.

14. The apparatus of claim 11, wherein the status message includes information for identifying an existence of the alarm condition to the remote monitor.

15. The apparatus of claim 11, wherein the status message includes information for identifying a type of alarm condition to the remote monitor.

16. The apparatus of claim 1, wherein the apparatus has an appearance of an object used for a different purpose within the volume, to camouflage the apparatus.

17. The apparatus of claim 1, wherein the apparatus is resistant to shock, wherein shock to the apparatus is indicative of an attempt to tamper with the apparatus.

18. The apparatus of claim 1, wherein the apparatus is positioned within the volume such that the apparatus monitors substantially an entire contents of the volume.

19. A fire-sensing system, comprising:
a fire sensor for detecting a presence of at least one of flame and smoke within a volume;
tamper countering structure for countering attempts to prevent the fire sensor from detecting the presence of the at least one of flame and smoke within the volume; and
a transmitter for transmitting an alarm notification upon detection of at least one of i.) the presence of at least one of flame and smoke within the volume, and ii.) an attempt to prevent the fire sensor from detecting the presence of the at least one of flame and smoke within the volume.

20. The system of claim 19, wherein the fire sensor comprises:
a flame sensor for detecting ultraviolet energy generated by flame to detect the presence of flame within the volume; and
a smoke sensor for detecting the presence of smoke within the volume.

21. The system of claim 20, wherein the flame sensor has an absence of sensitivity to electromagnetic radiation that normally occurs within the volume.

5 22. The system of claim 19, wherein the tamper countering structure comprises:

a motion sensor for detecting motion to the system, wherein a detection of motion to the system is indicative of an attempt to prevent the fire sensor from detecting the presence of the at least one of flame and smoke within the volume.

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23. The system of claim 19, wherein the tamper countering structure comprises:

a visible light sensor, wherein an absence of visible light to the visible light sensor is indicative of an attempt to prevent the fire sensor from detecting the presence of the at least one of flame and smoke within the volume.

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24. The system of claim 23, wherein the visible light sensor comprises:
means for generating electrical energy from the visible light, wherein the means for generating electrical energy from the visible light supplies electrical energy to charge a power supply used to power the system.

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25. The system of claim 19, wherein the tamper countering structure comprises:

camouflage for camouflaging an appearance of the system, wherein the camouflage provides the system with the appearance of an object used for a different purpose within the volume.

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26. The system of claim 19, wherein the tamper countering structure comprises:

a shock-resistant enclosure for the system for protecting the system against shock.

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27. The system of claim 19, wherein the transmitter transmits the alarm notification to persons within a vicinity of the system using at least one of an audible alarm, a visual alarm and a tactile alarm.

5 28. The system of claim 19, wherein the transmitter transmits the alarm notification to a remote monitor.

29. The system of claim 28, wherein receipt of the alarm notification by the remote monitor generates at least one of an audible alarm, a visual alarm and a tactile alarm at a location of the remote monitor to indicate the alarm notification to the remote monitor.

30. The system of claim 19, wherein the transmitter transmits a status message to a remote monitor at periodic intervals.

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31. The system of claim 30, wherein the status message includes information for identifying a location of a source of the status message to the remote monitor.

20 32. The system of claim 30, wherein the status message includes information for identifying an existence of an alarm condition associated with the system to the remote monitor.

33. The system of claim 30, wherein the status message includes information for identifying a type of an alarm condition associated with the system to the remote monitor.

34. The system of claim 30, wherein an absence of receipt of the status message by the remote monitor within the periodic interval is indicative of an alarm condition associated with the system, and

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wherein an absence of receipt of the status message by the remote monitor within the periodic interval generates at least one of an audible alarm, a visual alarm

and a tactile alarm at a location of the remote monitor to indicate the alarm condition to the remote monitor.

35. A method for sensing fire within a volume, comprising the steps of:
5 detecting a presence of flame within the volume;
detecting tampering that prevents a detection of the presence of flame within the volume; and
indicating an alarm condition in response to at least one of i.) the detection of the presence of flame within the volume, and ii.) the detection of tampering that
10 prevents the detection of the presence of the flame within the volume.

36. The method of claim 35, wherein the step of detecting a presence of flame within the volume comprises the steps of:
detecting ultraviolet energy generated by flame; and
15 ignoring electromagnetic radiation that normally occurs within the volume.

37. The method of claim 35, comprising the step of:
detecting a presence of smoke within the volume,
wherein the step of indicating an alarm condition further comprises the step of:
20 indicating the alarm condition in response to a detection of the presence of smoke within the volume.

38. The method of claim 35, wherein the step of detecting tampering comprises the step of:
25 detecting motion, wherein the motion indicates tampering that prevents the detection of the presence of the flame within the volume.

39. The method of claim 35, wherein the step of detecting tampering comprises the step of:
30 detecting an absence of visible light, wherein the absence of visible light indicates tampering that prevents the detection of the presence of the flame within the volume.

40. The method of claim 39, wherein the step of detecting an absence of visible light comprises the step of:

generating electrical energy from the visible light, wherein the generated
5 electrical energy supplies electrical energy to charge a power supply.

41. The method of claim 35, wherein the step of indicating an alarm condition comprises the step of:

indicating the alarm condition to persons within a vicinity of the volume using
10 at least one of an audible alarm, a visual alarm and a tactile alarm.

42. The method of claim 35, wherein the step of indicating an alarm condition comprises the step of:

transmitting the alarm condition to a remote monitor.
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43. The method of claim 42, wherein the step of transmitting the alarm condition to a remote monitor comprises the step of:

generating at least one of an audible alarm, a visual alarm and a tactile alarm
at a location of the remote monitor, upon receipt of the alarm condition by the remote
20 monitor, to indicate the alarm condition to the remote monitor.

44. The method of claim 35, comprising the step of:

transmitting a status message to a remote monitor at periodic intervals.

25 45. The method of claim 44, wherein an absence of receipt of the status message by the remote monitor within the periodic interval is indicative of an alarm condition, and

wherein the step of transmitting the status message comprises the step of:

generating at least one of an audible alarm, a visual alarm and a tactile
30 alarm at a location of the remote monitor, upon absence of receipt of the status message by the remote monitor within the periodic interval, to indicate the alarm condition to the remote monitor.

46. The method of claim 44, wherein the status message includes information for identifying a location of a source of the status message to the remote monitor.

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47. The method of claim 44, wherein the status message includes information for identifying an existence of the alarm condition to the remote monitor.

48. The method of claim 44, wherein the status message includes
10 information for identifying a type of the alarm condition to the remote monitor.

49. The method of claim 35, comprising the step of:
countering attempts at tampering that prevent the detection of the presence of
flame within the volume.

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50. The method of claim 49, wherein the step of countering attempts at
tampering comprises the step of:
creating camouflage that has an appearance of an object used for a different
purpose within the volume.

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51. The method of claim 49, wherein the step of countering comprises the
step of:
resisting shock that is indicative of attempts at tampering.

52. The method of claim 35, wherein the step of detecting a presence of
25 flame within the volume comprises the steps of:
monitoring substantially an entire contents of the volume for the presence of
flame within the volume.

53. A method for sensing fire within a volume, comprising the steps of:
30 detecting a presence of at least one of flame and smoke within the volume;

countering attempts to prevent a detection of the presence of the at least one of flame and smoke within the volume; and

transmitting an alarm notification upon detection of at least one of i.) the presence of the at least one of flame and smoke within the volume, and ii.) an attempt
5 to prevent the detection of the presence of the at least one of flame and smoke within the volume.

54. The method of claim 53, wherein the step of detecting a presence of at least one of flame and smoke within the volume comprises the steps of:

10 detecting ultraviolet energy generated by flame to detect the presence of flame within the volume;

ignoring electromagnetic radiation that normally occurs within the volume;
and

15 detecting the presence of smoke within the volume.

55. The method of claim 53, wherein the step of countering attempts comprises the step of:

20 detecting motion, wherein a detection of motion is indicative of an attempt to prevent the detection of the presence of at least one of flame and smoke within the volume.

56. The method of claim 53, wherein the step of countering attempts comprises the step of:

25 detecting an absence of visible light, wherein the absence of visible light is indicative of an attempt to prevent the detection of the presence of at least one of flame and smoke within the volume.

57. The method of claim 56, wherein the step of detecting an absence of visible light comprises the step of:

30 generating electrical energy from the visible light, wherein the generated electrical energy supplies electrical energy to charge a power supply.

58. The method of claim 53, wherein the step of countering attempts comprises the step of:

creating camouflage that has an appearance of an object used for a different purpose within the volume.

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59. The method of claim 53, wherein the step of countering attempts comprises the step of:

resisting shock that is indicative of an attempt to prevent the detection of the presence of the at least one of flame and smoke within the volume.

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60. The method of claim 53, wherein the step of transmitting an alarm notification comprises the step of:

transmitting the alarm notification to persons within a vicinity of the volume using at least one of an audible alarm, a visual alarm and a tactile alarm.

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61. The method of claim 53, wherein the step of transmitting an alarm notification comprises the step of:

transmitting the alarm notification to a remote monitor.

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62. The method of claim 61, wherein the step of transmitting the alarm notification to a remote monitor comprises the step of:

generating at least one of an audible alarm, a visual alarm and a tactile alarm at a location of the remote monitor, upon receipt of the alarm notification by the remote monitor, to indicate an alarm condition to the remote monitor.

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63. The method of claim 53, comprising the step of:

transmitting a status message to a remote monitor at periodic intervals.

64. The method of claim 63, wherein the status message includes
30 information for identifying a location of a source of the status message to the remote monitor.

65. The method of claim 63, wherein the status message includes information for identifying an existence of an alarm condition to the remote monitor.

66. The method of claim 63, wherein the status message includes information for identifying a type of an alarm condition to the remote monitor.

67. The method of claim 63, wherein an absence of receipt of the status message by the remote monitor within the periodic interval is indicative of an alarm condition, and

wherein the step of transmitting the status message comprises the step of:
generating at least one of an audible alarm, a visual alarm and a tactile alarm at a location of the remote monitor to indicate the alarm condition to the remote monitor.

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